

# **A METHOD AND SYSTEM OF ADAPTIVE REPLACEMENT CACHE WITH TEMPORAL FILTERING**

## **ABSTRACT**

A method for adaptively managing pages in a cache memory with a variable workload comprises defining a cache memory; organizing the cache into disjoint lists of pages, wherein the lists comprise lists  $T_1$ ,  $T_2$ ,  $B_1$ , and  $B_2$ ; maintaining a bit that is set to either “S” or “L” for every page in the cache, which indicates whether the bit has short-term utility or long-term utility; ensuring that each member page of  $T_1$  is marked either as “S” or “L”, wherein each member page of  $T_1$  and  $B_1$  is marked as “S” and each member page of  $T_2$  and  $B_2$  is marked as “L”; and maintaining a temporal locality window parameter such that pages that are re-requested within a window are of short-term utility and pages that are re-requested outside the window are of long-term utility, wherein the cache comprises pages that are members of any of lists  $T_1$  and  $T_2$ .